



OFFICE OF PUBLIC INSTRUCTION

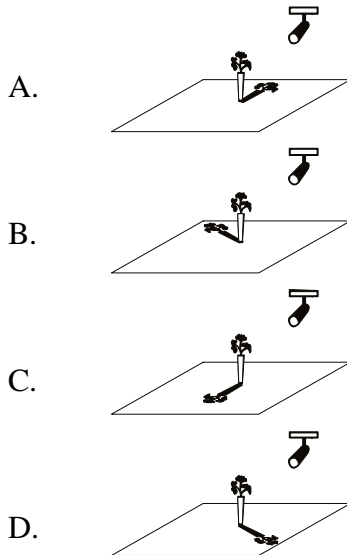
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Superintendent

Montana Science Grade 4 Sample Multiple-Choice Items

PHYSICAL SCIENCE

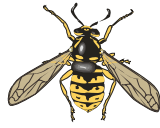
1. In the morning, John observed the Sun was shining on a puddle of water on a flat, paved road. The Sun was still shining in the afternoon, but the puddle had disappeared. What **most likely** happened to the water?
 - A. It melted.
 - B. It froze.
 - C. It went into the road.
 - D. It went into the air.
2. When a light switch is turned on, light energy is produced. Which form of energy produces this light energy?
 - A. chemical
 - B. electric
 - C. heat
 - D. sound
3. Which picture correctly shows where the shadow would be?



Montana Science Grade 4
Sample Items

LIFE SCIENCE

4. The pictures below show four insects.



Which organism is also an insect?

A.



B.



C.



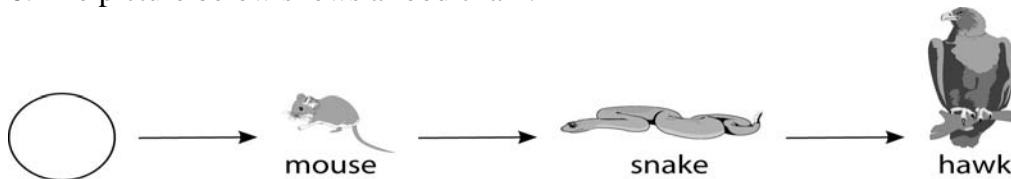
D.



5. A marsh dried up during a long, hot summer. This will **most likely** cause which change in the number of organisms?

- A. an increase in the number of bats
- B. an increase in the number of insect-eating birds
- C. a decrease in the number of mosquitoes
- D. a decrease in the number of deer

6. The picture below shows a food chain.



Which organism belongs in the circle of this food chain?

- A. a plant
- B. a frog
- C. a rabbit
- D. a hawk

**Montana Science Grade 4
Sample Items**

EARTH SCIENCE

7. Mary found the average air temperature for her town from September to May and placed them in this table. However, she forgot to record the average temperature for March.

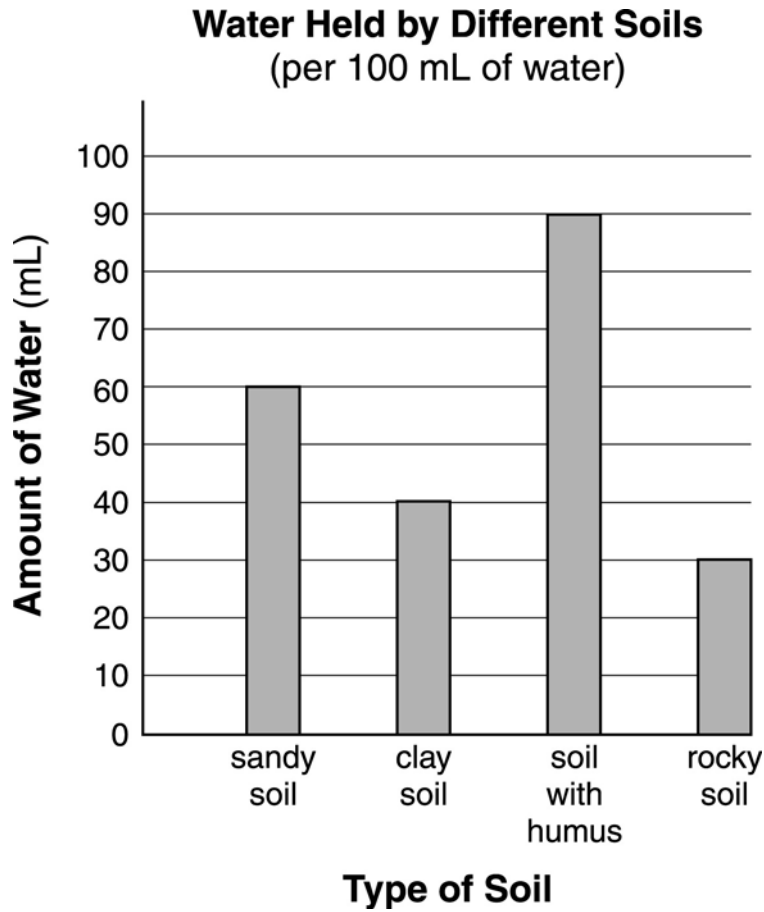
Average Air Temperature	
Month	Temperature (°F)
September	70
October	60
November	47
December	34
January	32
February	33
March	?
April	52
May	61

Which is the **best** estimate for the average air temperature in March?

- A. 33°F
 - B. 41°F
 - C. 56°F
 - D. 65°F
8. Melinda looked out her window one night and saw a very bright star just over the top of a tree. Later that night she looked out and the star was gone. Which of the following explains what happened to the star?
- A. The star appears to move because Earth turned.
 - B. The star only shines for a few hours each night.
 - C. The star is no longer seen because it burned out.
 - D. The star moves faster than other stars.

**Montana Science Grade 4
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9. The graph below shows the amount of water held by different soils.



Amy needs potting soil that will stay wet. What is the **best** soil for Amy to use?

- A. sandy soil
- B. clay soil
- C. soil with humus
- D. rocky soil

**Montana Science Grade 4
Sample Items**

Sample Constructed-Response Item

EARTH SCIENCE

10. The Moon and Earth are alike in some ways and different in some ways.
- a. Describe **two** ways that the Moon is like Earth.
 - b. Describe **two** ways that the Moon is different from Earth.

**Montana Science Grade 4
Sample Items**

Answer Key

1. D
2. B
3. C
4. D
5. C
6. A
7. B
8. A
9. C

10. Sample Answers – Other answers may also be acceptable.

a. Ways the Moon and Earth are alike:

- Both are spheres (round).
- Both have rocks on the surface.
- Both surfaces contain mountains and craters.
- Both rotate on their axis and so have night and day.
- Both have quakes (moonquakes on the Moon and earthquakes on Earth).
- Both have a layered structure including crust, mantle, and core.

b. Ways the Moon and Earth are different:

- The Moon has a smaller diameter than Earth.
- The Moon is less dense than Earth.
- Force of gravity on the Moon is $1/6^{\text{th}}$ that of Earth.
- Water isn't found on the Moon, but is plentiful and accessible on Earth.
- Plants and animals don't live on the Moon, but live on Earth.
- The same face of the moon always faces Earth, but the same face of Earth does not always face the Moon.
- The Moon has little or no air (oxygen), but Earth does.
- The Moon has less mass than Earth.